INTERNET CALL WAITING WITH VOICEMAIL SYSTEM THAT PROVIDES MONITORING DURING RECORDING

TECHNICAL FIELD

The invention relates to a call-waiting feature for telephone service subscribers. In particular, the invention relates to methods and a system for providing voice call information, voice call screening and voice messaging capabilities for a called telephone station set that is busy as a result of being connected to a data network, such as the Internet.

BACKGROUND OF THE INVENTION

Internet access is made available to home users by Internet Service Providers (ISPs). Typically, home users subscribe to Internet dial-up services available from ISPs, and use home personal computers (PCs) to connect to the ISPs via modems connected to the Public Switched Telephone Network (PSTN) by Plain Old Telephone Service (POTS), subscriber lines. In operation, a modem places the POTS subscriber line off-hook, dials a directory number (DN) associated with the ISP providing Internet access, and establishes a data connection with terminating equipment maintained by the ISP.

With the increasing variety of Internet services being provided, PCs are being connected to the Internet for increasingly longer periods of time. With the subscriber line in an off-hook condition, telephone calls placed to the subscriber receive busy treatment unless a call alerting system is available. Prior art methods of alerting a subscriber to an incoming call while a telephone termination is off-hook are typically subscription based and referred to as "Call Waiting" services. Call Waiting provides, during a telephone session between two parties, an audible alert to the called party, signifying that another telephone call has just been placed and is awaiting an answer. Such services work well for voice calls, but do not integrate well with data connections established using a modem for accessing the Internet because the Call Waiting alert disrupts the data connection. The Call Waiting service is therefore usually disabled by the user during an Internet session.

The problem of alerting the home PC user of incoming telephone calls during an Internet session, is addressed in many prior art references. For example, U.S. Pat. No. 5,805,587 entitled CALL NOTIFICATION FEATURE FOR A TELEPHONE LINE CONNECTED TO THE INTERNET, which issued Sep. 8, 1998 to Norris et al., describes a facility for alerting a subscriber whose telephone station set is connected to the Internet of a waiting telephone call. The alert is sent through the Internet connection. The waiting call is forwarded via the PSTN to a services platform which in turn establishes a connection to the subscriber using the Internet. The service platform notifies the subscriber of the waiting call via the Internet connection. Information, limited to Caller Identification (ID) or Automatic Number Identification (ANI) information, is provided to the subscriber. The services platform may forward the waiting telephone call to the subscriber via the Internet responsive to a subscriber request to do so.

U.S. Pat. No. 5,946,381 entitled CONTROLLING INCOMING CALLS VIA THE WORLDWIDE WEB, which issued Aug. 31, 1999 to Danne et al., describes a method and system in which an incoming call is routed to a service node with a Worldwide Web interface. Responsive to an incoming call, an "alert" software routine is executed in the service node, which sends an alert message to a Java software application executing on a called party's Internet connected terminal (i.e., a personal computer). The Java application causes a window to be displayed on the called party's terminal, which shows pertinent information about the calling party. The displayed window also contains "buttons" that permit the called party to choose whether to accept the call, reject the call, hold the call or re-direct the call to another phone.

U.S. Pat. No. 5,982,774 entitled INTERNET ON HOLD, which issued Nov. 9, 1999 to Foladare et al., describes methods of enabling a user connected to the Internet, over a telephone line, through an Internet access provider, to place the Internet connection on hold to answer an incoming telephone call. The user is informed of the waiting call by means of a signal sent by a local exchange carrier to the Internet access provider, indicating the presence of the waiting call and the identity of the calling party. This information is then transmitted by the Internet access provider. Upon an affirmative decision to take the call, indicated to the Internet access provider by means of a "click" on the screen of the user's terminal, the call to the Internet access provider is placed on hold and the incoming call is connected through to the user's telephone set.

U.S. Pat. No. 6,078,581 entitled INTERNET CALL WAITING, which issued Jun. 20, 2000 to Shtivelman et al., describes a telephony call-waiting system for clients having a computer with a video display unit, adapted to keep a status indication of a client's Internet connection status. During periods of time that the client is accessing the Internet, the system alerts the client of any waiting PSTN calls by sending an "alert" signal over the Internet connection. An audio and/or visual alert event is provided by the computer on receiving the "alert" signal. Information such as Caller ID can be provided. The system also provides for a client-initiated response to an alert accepting or rejecting a waiting call. Provisions are made for connecting the waiting call to the client's computer premises as an Internet protocol (IP) call. A facility is also provided to permit the client to deal with multiple waiting calls.

Although meritous, the above mentioned inventions only provide Caller ID and/or ANI information for screening purposes. The call screening information is derived from the phone number of the subscriber line from which the caller is placing the call, therefore providing to the called party with only the originating DN (if available). In many cases, the originating DN is not adequate to identify the calling party. Examples in which Caller-ID and ANI information fails to provide adequate screening information include when a caller calls from someone else's telephone set, or calls from a public telephone, or some other unknown or unrecognized number. Besides, the nature or intent (i.e., subject matter) of the call, and other relevant information, can only discovered by the called party after accepting the call.

U.S. Pat. No. 6,041,103 entitled INTERACTIVE CALL IDENTIFICATION, which issued Mar. 21, 2000 to La Porta et al., addresses the need for caller information prior to accepting a call, to assist a call recipient in screening the call. La Porta describes a method and system for interactively identifying a telephone call on a communications network as part of call establishment procedures. When a telephone call is placed to the called party, it is routed to a server element on the PSTN, which terminates the call. The server then prompts the calling party for a message. When this message is received, the first telephone connection is put on hold and a second telephone connection is established between the server element and the called party. The screen-